Increment 5

Training Data Set
Payload Operations Crew Training

July 2001

Introduction

Description and Purpose:

The Training Data Set provides the detailed training requirements for the Payload Developer (PD) and International Space Station (ISS) personnel including flight crew and ground support personnel as well as any special or unique training requirements of other individuals involved in the operation of the payloads. The PD provides the details of these training requirements in the training data set section of the Payload Data Library (PDL)

The data set supports the integration of the training requirements across the manifested payload complement per ISS increment. Data to be baselined with this document is contained in the Payload Ops Crew Training Option for the Training Discipline all payloads as listed below. Data on each payload includes the crew training curriculum, number of sessions, course objectives, timeframe, currency requirements Location of training, Instructor, Method and Medium of training, training units, Prerequisites and proficiency requirements.

ABBREVIATIONS

ABBREVIATION	DEFINITION
N/A	A question, table, schedule or service is not applicable
N/R	An item is not required

Requirements are provided by the Principal Investigator (PI)/Payload Developer (PD) team in the Training Data Set of the Payload Data Library (PDL). The first delivery of data from the developers is completed around Increment minus (I-) 24 months to begin the early assessment of Simulator/trainer requirements and crew training hours required for the given increment. This information should become baselined around I-18 to support the Multi Increment Training Plan (MITP) input and detailed crew training implementation plans.

Increment Overview

Currently under the Rev F Assembly Sequence, Increment 5 begins May 2002 and consists of three flights, UF-2, 9A and 11A. Flight 9A is scheduled to launch August 2002, and 11A in September 2002
The following experiments are manifested to be operated on Increment 5.

ADVASC
ARIS
CGBA
DCPCG
EGN
EP05*
EXPRESS RACK
HRF
- Rack/PC/Workstation
- GASMAP
- BIOPSY
- EVARM
- Epstein-Barr
- INTERACTIONS
- Mobility
- PUFF
- RENAL STONE
- SUBREGIONAL BONE

Ultrasound Checkout
XENON1
SMO's: EntryMonitoring, Midodrine

MAMS
MSG
MSG – GLIMIT
MSG – PFMI*
MSG - SUBSA*
MSG - InSPACE
PCG STES
PDS
PERS
PGBA/CGBA
SAMS II
ZCG

Payloads with * will not be baselined at this time as there is no data available.

This section contains:

Payload Acronym
Payload Sub-Element
Session Objective Name
Session Number
Session Hours
TimeFrame
Location
Method
Training Units
And the comments columns

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
ADF								
ADSEP								
ADVASC								

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
ADVASC	Advanced Astroculture	2.0 PL Science Background	1	0	I-12 to I-6	SSTF/PTC	Lecture	28 Vdc Power Supply Power Cable ADVASC Control Cable ADVASC Sensor Cable ADVASC-GC Trainer ADVASC-SS Trainer Air Line Condensate Fluid Syringe Condensate Sample Bag 1 Data Disks Ethernet Data/Video Cable Gas Sample Bag 1 Gas Syringe Nutrient Exchange Bag 1 (Spent) Nutrient Exchange Bag 2 (Fresh) Nutrient Fluid Syringe 1 Nutrient Fluid Syringe 2
	Comments: Included in Operations Overview (see 5.0). Preferred Time Frame is L-7.							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
ADVASC	Advanced Astroculture	2.0 PL Science Background	1	0	I-12 to I-6	SSTF/PTC		Nutrient Sample Bag 1
	Included in Operations Overview (see 5.0). Preferred Time Frame is L-7.							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
ADVASC	Advanced Astroculture	3.0 PL Science Appl	1	0	I-12 to I-6	SSTF/PTC	Lecture	28 Vdc Power Supply Power Cable ADVASC Control Cable ADVASC Sensor Cable ADVASC-GC Trainer ADVASC-SS Trainer Air Line Condensate Fluid Syringe Condensate Sample Bag 1 Data Disks Ethernet Data/Video Cable Gas Sample Bag 1 Gas Syringe Nutrient Exchange Bag 1 (Spent) Nutrient Exchange Bag 2 (Fresh) Nutrient Fluid Syringe 1 Nutrient Fluid Syringe 2
	Comments: Included in Operations Overview (see 5.0). Preferred Time Frame is L-7.							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
ADVASC	Advanced Astroculture	3.0 PL Science Appl	1	0	I-12 to I-6	SSTF/PTC		Nutrient Sample Bag 1
	Included in Operations Overview (see 5.0). Preferred Time Frame is L-7.							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
ADVASC	Advanced Astroculture	4.0 PL Systems Overview	1	0	I-12 to I-6	SSTF/PTC	Lecture	28 Vdc Power Supply Power Cable ADVASC Control Cable ADVASC Sensor Cable ADVASC-GC Trainer ADVASC-SS Trainer Air Line Condensate Fluid Syringe Condensate Sample Bag 1 Data Disks Ethernet Data/Video Cable Gas Sample Bag 1 Gas Syringe Nutrient Exchange Bag 1 (Spent) Nutrient Exchange Bag 2 (Fresh) Nutrient Fluid Syringe 1 Nutrient Fluid Syringe 2

Comments: Included in Operations Overview (see 5.0). Preferred Time Frame is L-7.

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
ADVASC	Advanced Astroculture	4.0 PL Systems Overview	1	0	I-12 to I-6	SSTF/PTC		Nutrient Sample Bag 1
	Included in Operations Overview (see 5.0). Preferred Time Frame is L-7.							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
ADVASC	Advanced Astroculture	5.0 PL Operations Overview	1	.5	I-12 to I-6	SSTF/PTC	Lecture	28 Vdc Power Supply Power Cable ADVASC Control Cable ADVASC Sensor Cable ADVASC-GC Trainer ADVASC-SS Trainer Air Line Condensate Fluid Syringe Condensate Sample Bag 1 Data Disks Ethernet Data/Video Cable Gas Sample Bag 1 Gas Syringe Nutrient Exchange Bag 1 (Spent) Nutrient Exchange Bag 2 (Fresh) Nutrient Fluid Syringe 1 Nutrient Fluid Syringe 2
	Comments: Includes Science Background, Science Applications, and Systems Overview. Preferred Time Frame is L-7.							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
ADVASC	Advanced Astroculture	5.0 PL Operations Overview	1	.5	I-12 to I-6	SSTF/PTC		Nutrient Sample Bag 1
	Includes Science Background, Science Applications, and Systems Overview. Preferred Time Frame is L-7.							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
ADVASC	Advanced Astroculture	6.0 PL Nominal Operations	1	.5	I-12 to I-6	SSTF/PTC	Demonstration Hands-On	28 Vdc Power Supply Power Cable ADVASC Control Cable ADVASC Sensor Cable ADVASC-GC Trainer ADVASC-SS Trainer Air Line Condensate Fluid Syringe Condensate Sample Bag 1 Data Disks Ethernet Data/Video Cable Gas Sample Bag 1 Gas Syringe Nutrient Exchange Bag 1 (Spent) Nutrient Exchange Bag 2 (Fresh) Nutrient Fluid Syringe 1 Nutrient Fluid Syringe 2
	Comments: Preferred Time Frame is L-7.							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
ADVASC	Advanced Astroculture	6.0 PL Nominal Operations	1	.5	I-12 to I-6	SSTF/PTC		Nutrient Sample Bag 1
	Preferred Time Frame is L-7.							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
ADVASC	Advanced Astroculture	7.0 PL Malfunction Ops	1	.5	I-12 to I-6	SSTF/PTC	Hands-On Demonstration	28 Vdc Power Supply Power Cable ADVASC Control Cable ADVASC Sensor Cable ADVASC-GC Trainer ADVASC-SS Trainer Air Line Condensate Fluid Syringe Condensate Sample Bag 1 Data Disks Ethernet Data/Video Cable Gas Sample Bag 1 Gas Syringe Nutrient Exchange Bag 1 (Spent) Nutrient Exchange Bag 2 (Fresh) Nutrient Fluid Syringe 1 Nutrient Fluid Syringe 2
	Comments: Preferred Time Frame is L-7.							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
ADVASC	Advanced Astroculture	7.0 PL Malfunction Ops	1	.5	I-12 to I-6	SSTF/PTC		Nutrient Sample Bag 1
	Preferred Time Frame is L-7.							
	Advanced Astroculture	8.0 PL Transfer	1	0				
	Comments: Unpowered ascent/descent. Transfer should be rountine and training should be done as part of generic transfer training activity. Interfaces covered in System Overview.							
	Advanced Astroculture	9.0 PL Transport	1					
	Comments: Unpowered on ascent/descent no training required. Activation occurs after transfer.							
ADVASC-2								
ADVASC-3								
AMS								
AMS-P								
APCF								
ARCTIC								
ARIS-ICE								
BCSS								
BPS								
BSTC								

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
BTR								
CBIX								
CCM								
CGBA								
CGBA-2								
CGBA-3								
CGBA-4	Commercial Generic Bioprocessing Apparatus	2.0 PL Science Background	1	0	I-6 to I-3	Other		
	Comments: Will be trained in conjunction with CGBA-3, Inc4, 8A.							
	Commercial Generic Bioprocessing Apparatus	3.0 PL Science Appl	1	0				
	Comments: Not Applicable							
	Commercial Generic Bioprocessing Apparatus	4.0 PL Systems Overview	1	0	I-6 to I-3	Other		
	Comments: Will be trained in conjunction with CGBA-3, Inc4, 8A.							
	Commercial Generic Bioprocessing Apparatus	5.0 PL Operations Overview	1	0	I-6 to I-3	Other		
	Comments: Will be trained in conjunction with CGBA-3, Inc4, 8A.							
	Commercial Generic Bioprocessing Apparatus	6.0 PL Nominal Operations	1	0	I-6 to I-3	SSTF/PTC		
	Comments: Will be trained in conjunction with CGBA-3, Inc4, 8A.							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
CGBA-4	Commercial Generic Bioprocessing Apparatus	7.0 PL Malfunction Ops	1	0	I-6 to I-3	SSTF/PTC		
	Comments: Not applicable							
	Commercial Generic Bioprocessing Apparatus	8.0 PL Transfer	1	0				
	Comments: Not applicable at the PD level. Transfer will be covered as part of the generic ISS transfer training.							
	Commercial Generic Bioprocessing Apparatus	9.0 PL Transport	1	.5	I-6 to I-3	SSTF/PTC	Self-Study Lecture Demonstration Hands-On	
	Comments: Applicable to ascent and descent crews only. CBT will be preferred method (CBT currently under development). If CBT not available, then a combination of Lecture, Demonstration, and Hands-on methods will be used during one session covering all materials.							
CGBA-5	Commercial Generic Bioprocessing Apparatus	2.0 PL Science Background	1	0	I-6 to I-3	Other		
	Comments: CGBA-5 will be trained with CGBA-4, and will be trained in conjunction with CGBA-3, Inc4, 8A.							
	Commercial Generic Bioprocessing Apparatus	3.0 PL Science Appl	1	0				
	Comments: Not Applicable							
	Commercial Generic Bioprocessing Apparatus	4.0 PL Systems Overview	1	0	I-6 to I-3	Other		
	Comments: CGBA-5 will be trained with CGBA-4, and will be trained in conjunction with CGBA-3, Inc4, 8A.							
	Commercial Generic Bioprocessing Apparatus	5.0 PL Operations Overview	1	0	I-6 to I-3	Other		
	Comments: CGBA-5 will be trained with CGBA-4, and will be trained in conjunction with CGBA-3, Inc4, 8A.							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
CGBA-5	Commercial Generic Bioprocessing Apparatus	6.0 PL Nominal Operations	1	0	I-6 to I-3	SSTF/PTC		
	Comments: CGBA-5 will be trained with CGBA-4, and will be trained in conjunction with CGBA-3, Inc4, 8A.							
	Commercial Generic Bioprocessing Apparatus	7.0 PL Malfunction Ops	1	0	I-6 to I-3	SSTF/PTC		
	Comments: Not applicable							
	Commercial Generic Bioprocessing Apparatus	8.0 PL Transfer	1	0				
	Comments: Not applicable at the PD level. Transfer will be covered as part of the generic ISS transfer training.							
	Commercial Generic Bioprocessing Apparatus	9.0 PL Transport	1	0	I-6 to I-3	SSTF/PTC		
	Comments: CGBA5 will be trained with CGBA4. Applicable to ascent and descent crews only. CBT will be preferred method (CBT currently under development). If CBT not available, then a combination of Lecture, and Hands-on methods will be used during one session covering all materials.							
CLMMF								
CPBF								
CPCG-H #1								
CPCG-H #2								
CPCG-V								
DCPCG	Dynamically Controlled Protein Crystal Growth	2.0 PL Science Background	1	0	I-12 to I-6	SSTF/PTC	Lecture	
	Comments: 2.0 Science Background, will be covered in the 6.0 Nominal Operations Session.							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
DCPCG	Dynamically Controlled Protein Crystal Growth	2.0 PL Science Background	1	2	I-12 to I-6	SSTF/PTC	Lecture	
	Comments: Includes curriculum 4.0 in an overview course							
	Dynamically Controlled Protein Crystal Growth	3.0 PL Science Appl	1	0	I-12 to I-6	SSTF/PTC		
	Comments: 3.0 Science Application Session is N/A for Increment 4.							
	Dynamically Controlled Protein Crystal Growth	3.0 PL Science Appl	1	1	I-12 to I-6	SSTF/PTC	Hands-On	DCPCG Standalone Trainer/Simulator
	Comments:							
	Dynamically Controlled Protein Crystal Growth	4.0 PL Systems Overview	1	0	I-12 to I-6	SSTF/PTC	Lecture	
	Comments: 4.0 Systems Overview, will be covered in the 6.0 Nominal Operations session.							
	Dynamically Controlled Protein Crystal Growth	4.0 PL Systems Overview	1	0	I-12 to I-6	SSTF/PTC	Lecture	
	Comments: Curriculum included with 2.0							
	Dynamically Controlled Protein Crystal Growth	5.0 PL Operations Overview	1	0	I-12 to I-6	SSTF/PTC	Lecture	
	Comments: 5.0 Operations overview, will be covered in the 6.0 Nominal Operations session.							
	Dynamically Controlled Protein Crystal Growth	5.0 PL Operations Overview	1	1	I-12 to I-6	SSTF/PTC	Hands-On Lecture	DCPCG Standalone Trainer/Simulator
	Comments: 5.0, 6.0 and 7.0 are combined into one course total length 4 hours							
	Dynamically Controlled Protein Crystal Growth	6.0 PL Nominal Operations	1	2	I-12 to I-6	SSTF/PTC	Hands-On Lecture	DCPCG Standalone Trainer/Simulator
	Comments: 6.0 Nominal Operations Session will contsist of DCPCG setup, shutdown and status check, as well as sessions; 2.0 Science Bacground, 4.0 Systems Overview & 5.0 Operations Overview.							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
DCPCG	Dynamically Controlled Protein Crystal Growth	6.0 PL Nominal Operations	1	2	I-12 to I-6	SSTF/PTC	Hands-On Lecture	DCPCG Standalone Trainer/Simulator
	Comments: 5.0, 6.0 and 7.0 are combined into one course total length 4 hours							
	Dynamically Controlled Protein Crystal Growth	7.0 PL Malfunction Ops	1	.5	I-12 to I-6	SSTF/PTC	Hands-On Lecture	DCPCG Standalone Trainer/Simulator
	Comments: 7.0 Malfuction Ops, will contain the following DCPCG Malfuction: Exchange V & C Computer Disk, Clean Intake Filter, CRIM-M Filter Change Out, and Exchange Camera Cable.							
	Dynamically Controlled Protein Crystal Growth	7.0 PL Malfunction Ops	1	1	I-12 to I-6	SSTF/PTC	Hands-On Lecture	DCPCG Standalone Trainer/Simulator
	Comments: The session hours involve: 1 hour for DCPCG experiment training. 5.0, 6.0 and 7.0 are combined into one course total length 4 hours							
	Dynamically Controlled Protein Crystal Growth	8.0 PL Transfer	1	1	I-12 to I-6	SSTF/PTC	Hands-On Hands-On	DCPCG Standalone Trainer/Simulator
	Comments: 8.0 Transfer Session will discuss unique transfer of DCPCG; V-Locker must be transfered power within 30 Minutes, Stowage of IVA Transport/Transfer Handle, RS-422 Adapter Cable. ISS Prime crew and UF2 shuttle crew will be trained.							
	Dynamically Controlled Protein Crystal Growth	8.0 PL Transfer	1	1	I-12 to I-6	SSTF/PTC	Hands-On	DCPCG Standalone Trainer/Simulator
	Comments:							
	Dynamically Controlled Protein Crystal Growth	9.0 PL Transport	1	.5	I-12 to I-6	SSTF/PTC	Hands-On	DCPCG Standalone Trainer/Simulator
	Comments: 9.0 Transport session will dicuss transport requriments of V and C Locker, (Status Checks, Mufler Assembly etc.) ISS Prime crew and UF2 crew could trained							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
DCPCG	Dynamically Controlled Protein Crystal Growth	9.0 PL Transport	1	.5	I-12 to I-6	SSTF/PTC	Hands-On	
	Comments: Training unit may be a functional CRIM trainer or CRIM software simulator.							
DCPCG-2								
DF								
DREAMTiME								
DT								
EGN	Protein Crystal Growth-Enhanced Gaseous Nitrogen Dewar	2.0 PL Science Background	1	.25	I-3 to Increment Start		Self-Study	
	Comments: The PCG-EGN is a passive stowage payload that requires crew interaction for transfer to and from the ISS.							
	Protein Crystal Growth-Enhanced Gaseous Nitrogen Dewar	3.0 PL Science Appl	1					
	Comments: The PCG-EGN is a passive stowage payload and does not require science application training..							
	Protein Crystal Growth-Enhanced Gaseous Nitrogen Dewar	4.0 PL Systems Overview	1	.25	I-3 to Increment Start		Self-Study	
	Comments: The PCG-EGN is a passive stowage payload that requires crew interaction for transfer to and from the ISS.							
	Protein Crystal Growth-Enhanced Gaseous Nitrogen Dewar	5.0 PL Operations Overview	1					
	Comments: The PCG-EGN is a passive stowage payload and does not require operations overview training.							
	Protein Crystal Growth-Enhanced Gaseous Nitrogen Dewar	6.0 PL Nominal Operations	1					
	Comments: The PCG-EGN is a passive stowage payload and does not require nominal operations training.							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
EGN	Protein Crystal Growth-Enhanced Gaseous Nitrogen Dewar	7.0 PL Malfunction Ops	1					
	Comments: The PCG-EGN is a passive stowage payload and does not require malfunction operations training.							
	Protein Crystal Growth-Enhanced Gaseous Nitrogen Dewar	8.0 PL Transfer	1	.25	I-3 to Increment Start		Self-Study	
	Comments: The PCG-EGN is a passive stowage payload that requires crew interaction for transfer to and from the ISS.							
	Protein Crystal Growth-Enhanced Gaseous Nitrogen Dewar	9.0 PL Transport	1					
	Comments: The PCG-EGN is a passive stowage payload and does not require transport training.							
	Protein Crystal Growth-Enhanced Gaseous Nitrogen Dewar	10.0 Baseline Data Collection	1					
	Comments: The PCG-EGN is a passive stowage payload and does not require base line data collection training.							
EMCS								
EPO-4								
ESTER								
ETR								
EXP-1								
EXP-17A.1								
EXP-2	ARIS	1.0 PL/Facility Overview	1	.5	I-12 to I-6	SSTF/PTC	Lecture	Classroom
	Comments: Payload familiarization lesson for ARIS system.							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
EXP-2	ARIS	6.0 PL Nominal Operations	1	1	I-12 to I-6	SSTF/PTC	Hands-On Demonstration	Active Rack Isolation System (ARIS Software Simulator)
	Comments: Lesson covers ARIS nominal operations, safety, and actuator adjustment.							
EXP-27A.1								
EXP-3								
EXP-4								
EXP-5								
EXP-6								
EXP-SAMPLE								
EXPSUB1								
EXPSUB2								
EXPSUB3								
EXPSUB4								
EXPSUB5								
EarthKAM								
EarthKAM-W								

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
End-To-End								
ExP								
FCU								
FOCUS								
GLAD								
GRC-TSC								
GSM								
HRF	BIOPSY	10.0 Baseline Data Collection	1	1	I-6 to I-3	PDC	Demonstration Hands-On	Experiment Unique Equipment
	Comments:	BDC OV (1 hour). Training for proper and safe use of BDC equipment (1 hour).						
	BIOPSY	10.0 Baseline Data Collection	2	1	I-6 to I-3	PDC	Hands-On	Experiment Unique Equipment
	Comments:	Training for proper and safe use of BDC equipment (1 hour).						
	BIOPSY	10.0 Baseline Data Collection	3	1	I-6 to I-3	PDC	Hands-On	Experiment Unique Equipment
	Comments:	L-90 day calf muscle test.						
	BIOPSY	10.0 Baseline Data Collection	4	2	I-3 to Increment Start	PDC	Hands-On	Experiment Unique Equipment
	Comments:	L-60 calf muscle test - 1 hour. MRI - 1 hour.						
	BIOPSY	10.0 Baseline Data Collection	5	1	I-3 to Increment Start	PDC	Hands-On	Experiment Unique Equipment
	Comments:	L-45 calf muscle biopsies - 1 hour.						
	BIOPSY	10.0 Baseline Data Collection	6	3	I-3 to Increment Start	PDC	Hands-On	Experiment Unique Equipment
	Comments:	L-30 & L-15 day calf muscle testing - 2 hour, L-30 calf MIR - 1 hour.						

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
HRF	BIOPSY	10.0 Baseline Data Collection	7	10.5			Hands-On	Experiment Unique Equipment
	Comments: BDC-postflight.							
	EVARM	6.0 PL Nominal Operations	1	1	I-12 to I-6	PDC	Hands-On	EVARM Experiment hardware HRF Common Power 28 VDC Cable Human Research Facility Rack PC Laptop
	Comments: Multiple crewmembers may be trained simultaneously.							
	EVARM	6.0 PL Nominal Operations	2	.25	I-6 to I-3	PDC	Hands-On	EVARM Experiment hardware PC Laptop
	Comments: Proficiency class. Can be at decision of crew whether needed or not. Can be integrated into JMST, other proficiency lessons or other training classes.							
	EVARM	6.0 PL Nominal Operations	3	.5	Onboard	PDC	Self-Study	
	Comments: On orbit refresher.							
	Epstein-Barr	10.0 Baseline Data Collection	1	.25	I-3 to Increment Start	PDC	Hands-On	
	Comments: L-65 days.							
	Epstein-Barr	10.0 Baseline Data Collection	2	.75	I-3 to Increment Start	PDC	Hands-On	
	Comments: L-3 days.							
	Epstein-Barr	10.0 Baseline Data Collection	3	.25		PDC	Hands-On	
	Comments: BDC - postflight. R+15d.							
	GASMAP	6.0 PL Nominal Operations	1	2	I-18 to I-12	PDC	Hands-On	GASMAP Human Research Facility Rack PC Laptop
	Comments:							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
HRF	GASMAP	6.0 PL Nominal Operations	2	1	I-6 to I-3	PDC	Hands-On	GASMAP
	Comments: Proficiency.							Human Research Facility Rack
								PC Laptop
	GASMAP	6.0 PL Nominal Operations	3	1.25	Onboard	PDC	Hands-On	
	Comments: On orbit. Schedule one hour prior to 90 day checkout and 15 minutes prior to 30 day checkout.							
	HRF Photo Requirements	5.0 PL Operations Overview	1	1	I-6 to I-3	PDC	Hands-On	
	Comments: ISS Camera class is a preferred prerequisite.							
	HRF Rack/Hardware Review	5.0 PL Operations Overview	1	3	I-3 to Increment Start	PDC	Hands-On	
	Comments: L-2 months (Payload bench review).							
	HRF Rack/PC/Workstation	5.0 PL Operations Overview	1	1.5	I-18 to I-12	PDC	Hands-On	Human Research Facility Rack
	Comments:							PC Laptop
								Workstation
	HRF Rack/PC/Workstation	6.0 PL Nominal Operations	1	2.5	I-18 to I-12	PDC	Hands-On	Human Research Facility Rack
	Comments:							PC Laptop
								Workstation
	HRF Rack/PC/Workstation	6.0 PL Nominal Operations	2	1	I-6 to I-3	PDC	Hands-On	Human Research Facility Rack
	Comments: Cover new workstation procedure of loading C drive using video capability. Proficiency.							PC Laptop
								Workstation

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
HRF	HRF Rack/PC/Workstation	6.0 PL Nominal Operations	3	1	I-6 to I-3	PDC	Hands-On	Human Research Facility Rack PC Laptop Workstation
	Comments: Final review of Common Software flight load for specific instrument. Proficiency.							
	HRF/BDC Overview	2.0 PL Science Background	1	4	I-18 to I-12	PDC	Lecture	
	Comments: Inc. 3 Backup Informed Consent.							
	HRF/BDC Overview	5.0 PL Operations Overview	1	.5	I-18 to I-12	PDC	Hands-On	
	Comments: A brief overview of HRF hardware and training as planned for Inc.5. Given by Increment Coordinator. Chance to introduce HRF and training team to crew.							
	HRF/BDC Overview	2.0 PL Science Background	2	2.5	I-18 to I-12	PDC	Lecture	
	Comments: Overview of human life sciences research on Increment 5 given by Increment Scientist and informed consent briefings by PIs.							
	Interactions	2.0 PL Science Background	1	2	I-3 to Increment Start	PDC	Hands-On	
	Comments:							
	Interactions	6.0 PL Nominal Operations	1	.25	Onboard	PDC	Hands-On	PC Laptop
	Comments: On-orbit refresher.							
	Interactions	10.0 Baseline Data Collection	1	2	I-3 to Increment Start	PDC	Hands-On	PC Laptop
	Comments: Four preflight sessions at 30 minutes each once a week for four weeks.							
	Interactions	10.0 Baseline Data Collection	1	1		PDC	Hands-On	PC Laptop
	Comments: Two 30 minute sessions postflight.							
	Mobility	10.0 Baseline Data Collection	1	.75	I-6 to I-3	PDC	Hands-On	
	Comments:							
	Mobility	10.0 Baseline Data Collection	1	1.2		PDC	Hands-On	
	Comments: BDC - postflight. R+0d. Two 36 min. (0.6 hour) sessions on R+0.							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
HRF	Mobility	10.0 Baseline Data Collection	2	.6	I-6 to I-3	PDC	Hands-On	
	Comments:							
	Mobility	10.0 Baseline Data Collection	2	.6		PDC	Hands-On	
	Comments: BDC - postflight. R+1d.							
	Mobility	10.0 Baseline Data Collection	3	.6	I-3 to Increment Start	PDC	Hands-On	
	Comments:							
	Mobility	10.0 Baseline Data Collection	3	.6		PDC	Hands-On	
	Comments: BDC - postflight. R+3d.							
	Mobility	10.0 Baseline Data Collection	4	.6	I-3 to Increment Start	PDC	Hands-On	
	Comments:							
	Mobility	10.0 Baseline Data Collection	4	.6		PDC	Hands-On	
	Comments: BDC - postflight. R+6d.							
	Mobility	10.0 Baseline Data Collection	5	.6		PDC	Hands-On	
	Comments: BDC - postflight. R+12d.							
	Mobility	10.0 Baseline Data Collection	6	.6		PDC	Hands-On	
	Comments: BDC - postflight. R+24d.							
	Mobility	10.0 Baseline Data Collection	7	.6		PDC	Hands-On	
	Comments: BDC - postflight. R+48d.							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
HRF	PuFF	5.0 PL Operations Overview	1	1.5	I-18 to I-12	PDC	Demonstration	Experiment Unique Equipment GASMAP Human Research Facility Rack PC Laptop
	Comments:							
	PuFF	6.0 PL Nominal Operations	1	3.5	I-12 to I-6	PDC	Hands-On	Experiment Unique Equipment GASMAP Human Research Facility Rack PC Laptop
	Comments:							
	PuFF	10.0 Baseline Data Collection	1	2.5	I-6 to I-3	PDC	Hands-On	
	Comments: I-4 BDC							
	PuFF	5.0 PL Operations Overview	2	2	Onboard	PDC	Hands-On	
	Comments: On-orbit refresher. Four sessions at 0.5 hours.							
	PuFF	6.0 PL Nominal Operations	2	1.5	I-12 to I-6	PDC	Hands-On	Experiment Unique Equipment GASMAP Human Research Facility Rack PC Laptop
	Comments: Standard sequence (Breathing protocol).							
	PuFF	10.0 Baseline Data Collection	2	2	I-3 to Increment Start	PDC	Hands-On	
	Comments: I-3 preflight BDC.							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
HRF	PuFF	6.0 PL Nominal Operations	3	2.5	I-12 to I-6	PDC	Hands-On	Experiment Unique Equipment GASMAP Human Research Facility Rack PC Laptop
	Comments: End to end integrated session.							
	PuFF	10.0 Baseline Data Collection	3	1.5	I-3 to Increment Start	PDC	Hands-On	
	Comments: I-2 BDC							
	PuFF	6.0 PL Nominal Operations	4	2	Onboard	Onboard	Self-Study	
	Comments: Four sessions of 0.5 hrs each comprise the total of 2 hours per crewmember.							
	PuFF	10.0 Baseline Data Collection	4	1.5	I-3 to Increment Start	PDC	Hands-On	
	Comments: I-1preflight BDC							
	PuFF	10.0 Baseline Data Collection	5	5.5		PDC	Hands-On	
	Comments: Postflight BDC							
	Renal Stone	5.0 PL Operations Overview	1	.5	Onboard	PDC	Hands-On	
	Comments: On orbit refresher.							
	Renal Stone	6.0 PL Nominal Operations	1	2	I-12 to I-6	PDC	Hands-On	Experiment Unique Equipment
	Comments: Since P. Whitson is the PI on this experiment, she is not required to attend training; however, she may at her discretion.							
	Renal Stone	10.0 Baseline Data Collection	1	2.5	I-6 to I-3	PDC	Hands-On	
	Comments: L-195-190 potassium citrate ingestion, food logs, urine collection							
	Renal Stone	10.0 Baseline Data Collection	1	5.5		PDC	Hands-On	
	Comments: BDC postflight. Food logs, urine collection at R+0-2, 6-7, 13-14 days.							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
HRF	Renal Stone	6.0 PL Nominal Operations	2	1	I-3 to Increment Start	PDC	Hands-On	Experiment Unique Equipment
	Comments: May do proficiency at I-3.							
	Renal Stone	10.0 Baseline Data Collection	2	1.25	I-3 to Increment Start	PDC	Hands-On	
	Comments: L-61-60 food logs, urine collection, TBD Med Ops may conduct this BDC in Russia.							
	Renal Stone	10.0 Baseline Data Collection	3	1.25	I-3 to Increment Start	PDC	Hands-On	
	Comments: L-11-10 food logs, urine collection, L-3 tablet ingestion; Med Ops will conduct this BDC in Russia.							
	SMO - Entry Monitoring	6.0 PL Nominal Operations	1	1	I-12 to I-6	Other	Demonstration	Experiment Unique Equipment
	Comments: Experiment overview at approximately L- 6 months.							
	SMO - Entry Monitoring	10.0 Baseline Data Collection	1	3.25	I-3 to Increment Start	Other	Hands-On	Experiment Unique Equipment
	Comments: BDC #1 using all flight config. hardware on suited crewmember.							
	SMO - Entry Monitoring	6.0 PL Nominal Operations	2	1	I-6 to I-3	Other	Demonstration Hands-On	Experiment Unique Equipment
	Comments: Training for hardware usage on unsuited crewmember.							
	SMO - Entry Monitoring	6.0 PL Nominal Operations	3	1	I-6 to I-3	Other	Demonstration Hands-On	
	Comments: Training for hardware usage on unsuited crewmember.							
	SMO - Entry Monitoring	6.0 PL Nominal Operations	4	1.5	I-6 to I-3	Other	Demonstration Hands-On	Experiment Unique Equipment
	Comments: Training for hardware usage on suited crewmember.							
	SMO - Entry Monitoring	6.0 PL Nominal Operations	5	2	I-3 to Increment Start	Other	Hands-On	Experiment Unique Equipment
	Comments: Hardware donning during ascent and/or descent simulations, if crew schedule and availablity permit.							
	SMO - Midodrine	6.0 PL Nominal Operations	1	.5	I-3 to Increment Start	Other	Lecture	Experiment Unique Equipment
	Comments: Fam session 90 to 45 days before launch.							
	SMO - Midodrine	10.0 Baseline Data Collection	1	.75	I-3 to Increment Start	Other		
	Comments: Operational Tilt Test (MR001) 10 days before launch.							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
HRF	SMO - Midodrine	6.0 PL Nominal Operations	2	.5	I-3 to Increment Start	Other		
	Comments: Drug tolerance test 90 to 45 days before launch.							
	SMO - Midodrine	10.0 Baseline Data Collection	2	.75	I-3 to Increment Start	Other		
	Comments: Midodrine (10mg) taken at Wheels Stop. Operational Tilt Test (MR001) + blood draw for serum midodrine levels (5cc) at landing site.							
	Subregional	10.0 Baseline Data Collection	1	4	I-3 to Increment Start	PDC	Hands-On	
	Comments: DEXA and MRI (includes travel to medical center.)							
	Subregional	10.0 Baseline Data Collection	1	7.75		PDC	Hands-On	
	Comments: BDC postflight. DEXA and MRI (includes travel to medical center) R+14 days, R+1 year.							
	ULTRASOUND	5.0 PL Operations Overview	1	1	Onboard	PDC	Hands-On	
	Comments: On-orbit CBT refresher.							
	ULTRASOUND	6.0 PL Nominal Operations	1	2.5	I-12 to I-6	PDC	Hands-On	Human Research Facility Rack Ultrasound
	Comments: Requirement to train a prime and backup crew member.							
	ULTRASOUND	6.0 PL Nominal Operations	2	1	I-3 to Increment Start	PDC	Hands-On	Human Research Facility Rack Ultrasound
	Comments: Proficiency session.							
	ULTRASOUND	6.0 PL Nominal Operations	3	1	Onboard	Onboard	Hands-On	
	Comments: On-orbit refresher.							
	Xenon1	10.0 Baseline Data Collection	1	1	I-3 to Increment Start	PDC	Hands-On	
	Comments: Inc. 3 BDC will have to be repeated based on Inc. 5 launch date.							
	Xenon1	10.0 Baseline Data Collection	2	1		PDC	Hands-On	
	Comments: Postflight BDC.							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
HRF IFPR								
HRF2								
ICT Dry Run								
IH								
JSC-TSC								
KuBRS								
LTMPF								
MACE II								
MAMS	Microgravity Acceleration Measurement System	4.0 PL Systems Overview	1	.5	I-18 to I-12		Self-Study	
	Comments: It is anticipated that the only training requirement for MAMS is to provide a brief payload familiarization handout.							
MELFI								
MEPS								
MGBX								
MISSE								
MSFC-TSC								

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
MSG	Investigating the Structure of Paramagnetic Aggregates from	2.0 PL Science Background	1	0	I-12 to I-6	SSTF/PTC	Self-Study	
	Comments: Explain the InSpace Science objectives.							
	Investigating the Structure of Paramagnetic Aggregates from	4.0 PL Systems Overview	1	0	I-12 to I-6	SSTF/PTC	Self-Study Demonstration	InSPACE Training Unit
	Comments: Describe the hardware and/or software the crew member will be using on board the ISS.							
	Investigating the Structure of Paramagnetic Aggregates from	5.0 PL Operations Overview	1	0	I-12 to I-6	SSTF/PTC	Self-Study Demonstration	InSPACE Training Unit
	Comments: Summarize the overall operations of InSpace.							
	Investigating the Structure of Paramagnetic Aggregates from	6.0 PL Nominal Operations	1	2.5	I-12 to I-6	SSTF/PTC	Self-Study Lecture Hands-On	InSPACE Training Unit MSG Training Unit
	Comments: Verify MSG configuration, activate InSpace, verify video configuration, select correct square wave generator parameters and correctly adjust current amplitude and frequency,verify camera alignment and focus and monitor InSpace structure formation, configure video recorders, perform video tape exchange, perform InSpace coil assembly exchange. Currency Requirement-Camera alignment and focus							
	Investigating the Structure of Paramagnetic Aggregates from	7.0 PL Malfunction Ops	1	0	I-12 to I-6	SSTF/PTC	Self-Study Lecture Hands-On	InSPACE Training Unit MSG Training Unit
	Comments: Align camera and adjust video image focus; adjust image brightness							
	Investigating the Structure of Paramagnetic Aggregates from	8.0 PL Transfer	1	2.5	I-12 to I-6	SSTF/PTC	Self-Study Hands-On	InSPACE Training Unit MSG Training Unit
	Comments: Set up/Installation of InSPACE in MSG.							
	Microgravity Science Glovebox	1.0 PL/Facility Overview	1	2	I-18 to I-12	SSTF/PTC	Lecture Demonstration	
	Comments:							
	Microgravity Science Glovebox	4.0 PL Systems Overview	1	0	I-18 to I-12	SSTF/PTC	Lecture Demonstration	
	Comments: MSG training unit is desirable but not required.							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
MSG	Microgravity Science Glovebox	5.0 PL Operations Overview	1	0	I-12 to I-6	SSTF/PTC	Lecture	
	Comments: MSG training unit is desirable but not required. Curriculum included with 1.0 session 1 Objective 5.7 LSE I/Fs was not accomplished in training 1.0 session 1, but is still required.						Demonstration	
	Microgravity Science Glovebox	6.0 PL Nominal Operations	1	1.5	I-12 to I-6	SSTF/PTC		MSG Training Unit
	Comments: Generic MSG Nom Ops							
	Microgravity Science Glovebox	7.0 PL Malfunction Ops	1	2	I-12 to I-6	SSTF/PTC	Hands-On	MSG Training Unit
	Comments: Mals Session 1 (Facility Mals)							
	Microgravity Science Glovebox	8.0 PL Transfer	1	0				
	Comments: Assumed to be covered by Generic Payload Transfer training.							
	Microgravity Science Glovebox	9.0 PL Transport	1					
	Comments: Not applicable for MSG.							
	Microgravity Science Glovebox	1.0 PL/Facility Overview	2	.5	I-12 to I-6	SSTF/PTC	Lecture	
	Comments:						Demonstration	
	Microgravity Science Glovebox	6.0 PL Nominal Operations	2	1	I-12 to I-6	SSTF/PTC		MSG Training Unit
	Comments: MSG Laptop Computer (MLC) Nom Ops							
	Microgravity Science Glovebox	7.0 PL Malfunction Ops	2	2	I-12 to I-6	SSTF/PTC	Hands-On	
	Comments: Mals Session 2 (Video Drawer)							
	Microgravity Science Glovebox	6.0 PL Nominal Operations	3	1	I-12 to I-6	SSTF/PTC		
	Comments: MSG Video Drawer Nom Ops							
	Microgravity Science Glovebox	6.0 PL Nominal Operations	4	6	I-12 to I-6	SSTF/PTC		MSG Training Unit
	Comments: MSG Checkout/On orbit commissioning. Only required on first increment.							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
MSG	g-LIMIT	2.0 PL Science Background	1	0	I-18 to I-12	SSTF/PTC	Self-Study	
	Comments:	State the fundamentals of vibration isolation. Summarize previous technology accomplishments and future technology plans. Point out the potential safety hazards associated with operating g-LIMIT. (Trained during g-LIMIT set-up)					Self-Study	
	g-LIMIT	4.0 PL Systems Overview	1	0	I-18 to I-12	SSTF/PTC	Self-Study	g-LIMIT Training Unit
	Comments:	Describe the g-LIMIT hardware and/or software the crewmember will be using on board the ISS including: structural and utility interfaces utilized by g-LIMIT operations, test plan, and data management. (Trained during g-LIMIT setup)					Self-Study Lecture	
	g-LIMIT	5.0 PL Operations Overview	1	0	I-18 to I-12	SSTF/PTC	Self-Study	g-LIMIT Training Unit
	Comments:	Explain in layman's terms the g-LIMIT characterization test requirements and objectives. (Trained during g-LIMIT set-up)					Lecture Self-Study	
	g-LIMIT	6.0 PL Nominal Operations	1	1	I-18 to I-12	SSTF/PTC	Hands-On	MSG Training Unit
	Comments:	The crew member will be able to use g-LIMIT hardware and software per crew procedures to perform nominal operations.					Lecture Self-Study	g-LIMIT Training Unit
	g-LIMIT	7.0 PL Malfunction Ops	1	0	I-18 to I-12	SSTF/PTC	Self-Study	MSG Training Unit
	Comments:	The crew member will be able to use g-LIMIT hardware and software per crew procedures to perform malfunction procedures up to the point of corrective action. (Trained during Nominal Operations) Corrective action will require Session #2, Orbital Replacement Procedures. (Trained only as needed/determined by PTI)					Hands-On Lecture	g-LIMIT Training Unit
	g-LIMIT	8.0 PL Transfer	1	2	I-18 to I-12	SSTF/PTC	Self-Study	MSG Training Unit
	Comments:	The crew member will be able to set-up and stow the g-LIMIT hardware and software per crew procedures. (g-LIMIT Overview will be trained during this training session)					Hands-On Lecture	g-LIMIT Training Unit

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
MSG	g-LIMIT	7.0 PL Malfunction Ops	2	1.5	I-18 to I-12	SSTF/PTC	Self-Study Hands-On Lecture	MSG Training Unit g-LIMIT Training Unit
	Comments: This session will occur only when on orbit ORUs are planned for the increment. The crew member will be able to use g-LIMIT hardware and software per crew procedures for Orbital Replacement Unit Operations. Timeframe for this session could be in I-12 to I-6.							
MSRR-1								
NLO-PTFG								
NLO-PVT								
OPCGA								
PCG-BAG								
PCG-STES	PCG-STES	2.0 PL Science Background	1	1	I-12 to I-6	SSTF/PTC	Lecture	DCAM trainer EDCAM Trainer PCAM Trainer PCG-STES Trainer VDA-2 Trainer
	Comments: Science background pitch is 1 hour, STES facility (Nom Ops) pitch is 1 hour, and internal payload (P/L Overview) pitch (PCAM, DCAM, EDCAM, VDA-2) is 1 hour. Grand Total: 3 hours							
	PCG-STES	3.0 PL Science Appl	1					
	Comments: N/A							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
PCG-STES	PCG-STES	4.0 PL Systems Overview	1	1	I-12 to I-6	SSTF/PTC	Lecture Demonstration Hands-On	DCAM trainer EDCAM Trainer PCAM Trainer PCG-STES Trainer VDA-2 Trainer
	Comments:	Science background pitch is 1 hour, STES facility (Nom Ops) pitch is 1 hour, and internal payload (P/L Overview) pitch (PCAM, DCAM, EDCAM, VDA-2) is 1 hour. Grand Total: 3 hours						
	PCG-STES	5.0 PL Operations Overview	1	0	I-12 to I-6	SSTF/PTC		
	Comments:							
	PCG-STES	6.0 PL Nominal Operations	1	1	I-12 to I-6	SSTF/PTC	Demonstration Hands-On	DCAM trainer EDCAM Trainer PCAM Trainer PCG-STES Trainer VDA-2 Trainer
	Comments:	Science background pitch is 1 hour, STES facility (Nom Ops) pitch is 1 hour, and internal payload (P/L Overview) pitch (PCAM, DCAM, EDCAM, VDA-2) is 1 hour. Grand Total: 3 hours						
	PCG-STES	7.0 PL Malfunction Ops	1	0	I-12 to I-6	SSTF/PTC		
	Comments:							
	PCG-STES	8.0 PL Transfer	1	0	I-6 to I-3	SSTF/PTC		
	Comments:	Time required to complete transfer training is counted separately from the 3 hours included in this training data set.						
	PCG-STES	9.0 PL Transport	1	0	I-3 to Increment Start	SSTF/PTC		
	Comments:							
	PCG-STES	10.0 Baseline Data Collection	1					
	Comments:	N/A						
PCS								

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
PDS	PDS	2.0 PL Science Background	1	0	I-12 to I-6	SSTF/PTC	Lecture	
	Comments:	Should be trained with any identified user on Increment 5. This would require adding 2 hours to increment training for a single user on the increment. Included in Section 4.0						
	PDS	4.0 PL Systems Overview	1	0	I-12 to I-6	SSTF/PTC	Demonstration	PNTD Holders (Plastic nuclear track detectors in holders) PNTD Supply/Return Kit TLD Kit TLD Reader Kit TLD-Reader TLDs (Thermo-luminiscent detectors)
	Comments:	To be trained with identified user on Increment 5. This course combines 2.0, 4.0 and 5.0 into an overview which takes 1 hour.						
	PDS	5.0 PL Operations Overview	1	0	I-12 to I-6	SSTF/PTC	Lecture	
	Comments:	To be trained with any identified user on increment 5 Included in 4.0						
	PDS	6.0 PL Nominal Operations	1	0	I-12 to I-6	SSTF/PTC	Hands-On	PNTD Holders (Plastic nuclear track detectors in holders) PNTD Supply/Return Kit TLD Kit TLD Reader Kit TLD-Reader TLDs (Thermo-luminiscent detectors)
	Comments:	To be trained with any identified user on Increment 5. Experiment using PDS will determine currency requirements as it relates to the experiment training						

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
PDS	PDS	6.0 PL Nominal Operations					Hands-On	PNTD Holders (Plastic nuclear track detectors in holders) PNTD Supply/Return Kit TLD Kit TLD Reader Kit TLD-Reader TLDs (Thermo-luminiscent detectors)
	Comments: This is a proficiency building training. Training hours have been incorporated in HRF-RAD3 training input.							
PEI								
PERS	Click New to create a record.	6.0 PL Nominal Operations	1	.5	I-30 to I-18	SSMTF	Hands-On	Belly Pack H-Strap Laptop Restraint Belt (LRB) Single Strap Tool Pages - Generic Tool Page - ARIS Tool Page
	Comments:							
PGBA								

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
PGBA	PGBA/CGBA	2.0 PL Science Background	1	.5	I-12 to I-6	PDC	Lecture	
	Comments:	Prefer location to be PDC, but if not feasible then JSC PTC Only brief presentation of Science Background along with operations & hardware overview will be presented at beginning of hands-on session to assist in performing operations properly.						
	PGBA/CGBA	3.0 PL Science Appl	1	.05	I-12 to I-6		Demonstration	PGBA-Trainer
	Comments:	to be conducted along with Nominal Operations Hands On training Will use live specimens for practice in handling, performing harvesting procedure using harvesting tool, and with fixation procedure.					Hands-On Demonstration Hands-On	
	PGBA/CGBA	4.0 PL Systems Overview	1	0			Lecture	
	Comments:	To be included along with section 2.0 Only material intended to enhance performance of harvesting & stowage procedures will be presented.						
	PGBA/CGBA	5.0 PL Operations Overview	1	0			Lecture	
	Comments:	Included in section 2.0 A presentation of objectives of operations will be covered in order to enhance performance of harvesting process.						
	PGBA/CGBA	6.0 PL Nominal Operations	1	3.5	I-12 to I-6	PDC	Demonstration	PGBA-Trainer
	Comments:	To be conducted in conjunction with Section 2.0, 4.0, 5.0 and 3.0, prefer location to be PDC, if not feasible then JSC PTC Will include Hands-on Training of PGBA Nominal Operations including Maintenance, access to Plant Growth Chamber, plant harvesting, use of harvesting tool, fixation procedures, and stowage procedures. Also includes Hands-on Training of CGBA Nominal Operations including Maintenance, and access to cold stowage of CGBA. A brief review of managing both PGBA and CGBA in case of anomalies will also be included in the process of hands-on training.					Hands-On	
	PGBA/CGBA	8.0 PL Transfer	1	.5	I-12 to I-6	PDC	Self-Study	PGBA-Trainer
	Comments:	Preferred Location is PDC, but if not feasible then JSC PTC					Hands-On	

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
PGBA	PGBA/CGBA	9.0 PL Transport	1	.5	I-12 to I-6	PDC	Self-Study	PGBA-Trainer
	Comments: prefer location to be PDC, if not feasible then JSC PTC Will cover all aspects of operations during Transport for both PGBA and CGBA Note: not included in Increment Training hours						Hands-On	
PSCP								
RWPS								
S*T*A*R*S								
SAMS II	SAMS II, Interim Control Unit	2.0 PL Science Background	1	0	I-12 to I-6	SSTF/PTC	Lecture	
	Comments: Included in 6.0, PL Nominal Operations.							
	SAMS II, Interim Control Unit	3.0 PL Science Appl	1	0				
	Comments: not applicable to SAMS II							
	SAMS II, Interim Control Unit	4.0 PL Systems Overview	1	0	I-12 to I-6	SSTF/PTC		ICU Drawer
	Comments: Included in 6.0 PL Nominal Operations							ICU laptop
								RTS Drawer
	SAMS II, Interim Control Unit	5.0 PL Operations Overview	1	0	I-12 to I-6	SSTF/PTC		ICU Drawer
	Comments: Included in 6.0 PL Nominal Operations.							ICU laptop
								RTS Drawer
	SAMS II, Interim Control Unit	6.0 PL Nominal Operations	1	2	I-12 to I-6	SSTF/PTC	Demonstration	ICU Drawer
	Comments: SAMS II has no time frame requirement for training. We assume the Express Rack template is being followed.						Hands-On	ICU laptop
								RTS Drawer

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
SAMS II	SAMS II, Interim Control Unit	8.0 PL Transfer	1	0				
	Comments:							
	SAMS II, Interim Control Unit	9.0 PL Transport	1	0				
	Comments: no crew training required for SAMS II							
SPHERES								
SkySat								
Space DRUMS								
Vulcan-TP/PDA								
WORF	WORF Rack	4.0 PL Systems Overview	1	1	I-18 to I-12	SSTF/PTC	Lecture	WORF Rack Familiarization Overview
	Comments: Training will include the following: Purpose and Science objectives, major component names and locations and hardware elements, basic operations including overview of laptop displays and understanding any safety issues. Training will need to be done based on crew rotation.							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
WORF	WORF Rack	6.0 PL Nominal Operations	1	2	I-18 to I-12	SSMTF	Hands-On	WORF Rack Crew Operations Training
	Comments:	Training will include: Simulation of activation and deactivation of WORF to include configuring all switch settings, power and data connections / disconnections utilizing the WORF laptop displays and UOP panel. Remove and replace Bump Shield Panes. Install and remove Hatch Cover and Payload Shroud. Install Rear Closeout seal and remove Bump Shield Pins. Install, adjust and remove the small Camera Bracket. Setup, operation and positioning the Air Knife. Retrieval and stowage operations for the Aisle-side cover, Scratch Pane, and Payload Shroud. Setup, activation and operation of the Portable Light. Configure and Operation of the External Window Shutter and Shutter Actuator Grappling mechanism. Additional training required that is not currently supported by the ground rack includes: Scratch pane removal and stowage, condensation prevention system, Window care, Window shield changeout, and Window shutter operation.						
	WORF Rack	7.0 PL Malfunction Ops						
	Comments:	This session is for On Orbit Replacement (ORU). Currently there are no plans for ORU training. Training will be developed if necessary.						
	WORF Rack	9.0 PL Transport						
	Comments:	It is assumed that generic ISPR transport training will adequately address WORF Rack transport.						
WPRAC								
WPRAC2								
WSF1								
ZCG	ZCG Furnace Unit	2.0 PL Science Background	1		I-12 to I-6	Other	Lecture	
	Comments:	Included in 4.0						
	ZCG Furnace Unit	3.0 PL Science Appl	1					
	Comments:	Included in 4.0						

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
ZCG	ZCG Furnace Unit	4.0 PL Systems Overview	1	2	I-12 to I-6	SSTF/PTC	Lecture Lecture Demonstration	Actuators Autoclave units Batteries Power Strip Recharger Screwdrivers
	Comments: This session includes overviews of Science, Hardware, Systems, and Operations.							
	ZCG Furnace Unit	5.0 PL Operations Overview	1		I-12 to I-6	SSTF/PTC	Lecture Lecture Demonstration Demonstration	
	Comments: Included in 4.0							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
ZCG	ZCG Furnace Unit	6.0 PL Nominal Operations	1	3	I-12 to I-6	SSTF/PTC	Hands-On	Actuators
	Comments: Prefer L-10 and L-3 time frames. Would like to have one session with the simulator integrated into the EXPRESS rack simulator.							Autoclave units
								Batteries
								EXPRESS Laptop Power Cable
								IZECS to Furnace Module Cable
								IZECS to Laptop Cable
								Improved ZCG Experiment Control System (IZECS)
								Laptop w/Display and simulator software
								Power Strip
								Recharger
								Screwdrivers
								ZCG Furnace Module (W/4 Bolts)
								ZCG Mounting Plate
								iZECS Power Cable (to Power Strip)

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
ZCG	ZCG Furnace Unit	7.0 PL Malfunction Ops	1	1	I-12 to I-6	SSTF/PTC	Hands-On	Actuators
	Comments: Prefer L-10 and L-3 time frames.							Autoclave units
								Batteries
								EXPRESS Laptop Power Cable
								IZECS to Furnace Module Cable
								IZECS to Laptop Cable
								Improved ZCG Experiment Control System (IZECS)
								Laptop w/Display and simulator software
								Power Strip
								Recharger
								Screwdrivers
								ZCG Furnace Module (W/4 Bolts)
								ZCG Mounting Plate
								iZECS Power Cable (to Power Strip)

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
ZCG	ZCG Furnace Unit	6.0 PL Nominal Operations	2	2.5	I-6 to I-3	SSTF/PTC	Hands-On	Actuators Autoclave units Batteries EXPRESS Laptop Power Cable IZECS to Furnace Module Cable IZECS to Laptop Cable Improved ZCG Experiment Control System (IZECS) Laptop w/Display and simulator software Power Strip Recharger Screwdrivers ZCG Furnace Module (W/4 Bolts) ZCG Mounting Plate iZECS Power Cable (to Power Strip)

Comments: Prefer L-10 and L-3 time frames. Would like to have one session with the simulator integrated into the EXPRESS rack simulator.

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
ZCG	ZCG Furnace Unit	7.0 PL Malfunction Ops	2	1	I-6 to I-3	SSTF/PTC	Hands-On	Actuators
	Comments: This is a proficiency class.							Autoclave units
								Batteries
								EXPRESS Laptop Power Cable
								IZECS to Furnace Module Cable
								IZECS to Laptop Cable
								Improved ZCG Experiment Control System (IZECS)
								Laptop w/Display and simulator software
								Power Strip
								Recharger
								Screwdrivers
								ZCG Furnace Module (W/4 Bolts)
								ZCG Mounting Plate
								iZECS Power Cable (to Power Strip)

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
ZCG	ZCG Furnace Unit	7.0 PL Malfunction Ops	3	.5	I-6 to I-3	SSTF/PTC	Hands-On	Actuators Autoclave units Batteries EXPRESS Laptop Power Cable IZECS to Furnace Module Cable IZECS to Laptop Cable Improved ZCG Experiment Control System (IZECS) Laptop w/Display and simulator software Power Strip Recharger Screwdrivers ZCG Furnace Module (W/4 Bolts) ZCG Mounting Plate iZECS Power Cable (to Power Strip)
	Comments: This is a required class that can be taught in conjunction with Session 1, but it is prefered to have it taught in conjunction with Session 2 as close to launch as possible.							

g-LIMIT

This section contains:

Payload Acronym
Payload Sub-Element
Session Objective Name (number only)
Session Number
Medium
Prerequisites
Proficiency
Currency
Instructor
And Objectives

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
ADF									
ADSEP									
ADVASC	Advanced Astroculture	2.0	1	Handout			Not required	PDC training personnel	2.1 Purpose of Investigation
	Advanced Astroculture	3.0	1	Handout			Not required	PDC training personnel	See Comments
	Advanced Astroculture	4.0	1	Handout			Not required	PDC training personnel	4.1 Hardware Components 4.2 Software Capabilities 4.3 EXPRESS Rack Interfaces
	Advanced Astroculture	5.0	1	Handout			Not required	PDC training personnel	5.1 Ascent/Descent Configuration 5.2 Activation/Deactivation 5.3 Normal Monitoring 5.4 Routine Maintenance Activities 5.5 Malfunction Activities 5.6 Ground Control and Support 5.7 Safety Considerations

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Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
ADVASC	Advanced Astroculture	6.0	1	Simulator Simulator			Not required	PDC training personnel	6.10 ADVASC End Experiment 6.11 ADVASC Experiment Resumption (Corrective) 6.12 ADVASC Deactivation 6.13 ADVASC Cable Disconnections 6.14 ADVASC Filter Cleaning (Corrective) 6.1 ADVASC Cable Connections 6.2 ADVASC Activation 6.3 ADVASC Status Monitoring 6.4 ADVASC Gas Sample 6.5 ADVASC Condensate Sample 6.6 ADVASC Nutrient Fluid Sample 6.7 ADVASC Nutrient Fluid Exchange 6.8 ADVASC Clock Adjustment (Corrective) 6.9 ADVASC Change Set-Points (Corrective)
	Advanced Astroculture	7.0	1	Simulator Simulator			Not required	PDC training personnel	7.1 ADVASC Data Download 7.2 ADVASC Power Cycle
	Advanced Astroculture	8.0	1						
	Advanced Astroculture	9.0	1						

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
ADVASC-2									
ADVASC-3									
AMS									
AMS-P									
APCF									
ARCTIC									

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
ARIS-ICE									
BCSS									
BPS									
BSTC									
BTR									
CBIX									

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
CCM									
CGBA									
CGBA-2									
CGBA-3									
CGBA-4	Commercial Generic Bioprocessing Apparatus	2.0	1				Not Required	Other (Specify)	
	Commercial Generic Bioprocessing Apparatus	3.0	1						
	Commercial Generic Bioprocessing Apparatus	4.0	1				Not Required	Other (Specify)	

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
CGBA-4	Commercial Generic Bioprocessing Apparatus	5.0	1				Not Required	N/A (Self-Study)	
	Commercial Generic Bioprocessing Apparatus	6.0	1				Not Required	N/A (Self-Study)	
	Commercial Generic Bioprocessing Apparatus	7.0	1				Not Required	N/A (Self-Study)	
	Commercial Generic Bioprocessing Apparatus	8.0	1						
	Commercial Generic Bioprocessing Apparatus	9.0	1	CBT Handout Simulator Simulator				N/A (Self-Study)	9.1 Payload Description 9.2 Payload Transport Overview 9.3 Special Handling Requirements 9.5 Transport Operations Procedures Performance 9.6 Applicable Malfunctions Procedures
CGBA-5	Commercial Generic Bioprocessing Apparatus	2.0	1				Not Required	N/A (Self-Study)	
	Commercial Generic Bioprocessing Apparatus	3.0	1						

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
CGBA-5	Commercial Generic Bioprocessing Apparatus	4.0	1				Not Required	N/A (Self-Study)	
	Commercial Generic Bioprocessing Apparatus	5.0	1				Not Required	N/A (Self-Study)	
	Commercial Generic Bioprocessing Apparatus	6.0	1				Not Required	Other (Specify)	
	Commercial Generic Bioprocessing Apparatus	7.0	1				Not Required	N/A (Self-Study)	
	Commercial Generic Bioprocessing Apparatus	8.0	1						
	Commercial Generic Bioprocessing Apparatus	9.0	1					N/A (Self-Study)	

CLMMF

CPBF

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
CPCG-H #1									
CPCG-H #2									
CPCG-V									
DCPCG	Dynamically Controlled Protein Crystal Growth	2.0	1	Handout	None		Not Required	PDC training personnel	2.1 Exp. Background 2.2 Science Objectives 2.3 Science Background 2.4 Previous Studies/Flts
	Dynamically Controlled Protein Crystal Growth	2.0	1	Handout	None	Fully Trained Operator	Not Required	PDC training personnel	2.1 Exp. Background 2.2 Science Objectives 2.3 Science Background 2.4 Previous Studies/Flts
	Dynamically Controlled Protein Crystal Growth	3.0	1				Every 6 months	PDC training personnel	
	Dynamically Controlled Protein Crystal Growth	3.0	1	Simulator	Section 2	Prime	Every 6 months	PDC training personnel	3.1 Skill Building

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
DCPCG	Dynamically Controlled Protein Crystal Growth	4.0	1	Handout			Not Required	PDC training personnel	4.1 HW and SW Overview 4.2 Commanding 4.3 Data Collection 4.5 Safety related to HW/SW Design
	Dynamically Controlled Protein Crystal Growth	4.0	1	Handout	Section 2,3	Fully Trained Operator	Not Required	PDC training personnel	4.1 HW and SW Overview 4.2 Commanding 4.3 Data Collection 4.5 Safety related to HW/SW Design
	Dynamically Controlled Protein Crystal Growth	5.0	1	Handout			Not Required	PDC training personnel	5.1 Activity Definitions Overview 5.2 Timeline Scheduling Requirements Overview 5.3 Nominal Operationa/Routine Maintenace Overview 5.4 Corrective Maintenance/ALT/Malfunction Operations Overview 5.5 Operational Safety 5.8 Crew to Ground Interfaces Operations

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Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
DCPCG	Dynamically Controlled Protein Crystal Growth	5.0	1	Simulator Handout	Sections 2,3,4	Prime	Not Required	PDC training personnel	5.1 Activity Definitions Overview 5.2 Timeline Scheduling Requirements Overview 5.3 Nominal Operationa/Routine Maintenace Overview 5.4 Corrective Maintenance/ALT/Malfunction Operations Overview 5.5 Operational Safety 5.8 Crew to Ground Interfaces Operations
	Dynamically Controlled Protein Crystal Growth	6.0	1	Simulator Handout		Fully Trained Operator	Not required	PDC training personnel	6.1 Nom Ops Proced Walk 6.2 Routine Maintenance 6.3 Safety 6.5 Proficiency Building
	Dynamically Controlled Protein Crystal Growth	6.0	1	Simulator Handout	Sections 2,3,4,5	Fully Trained Operator	Every 6 months	PDC training personnel	6.1 Nom Ops Proced Walk 6.2 Routine Maintenance 6.3 Safety 6.5 Proficiency Building
	Dynamically Controlled Protein Crystal Growth	7.0	1	Simulator Handout	session 6.0	Fully Trained Operator	Not Required	PDC training personnel	7.1 Mals/Alts/Cor Maint Walk 7.2 Safety 7.4 Proficiency Building

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
DCPCG	Dynamically Controlled Protein Crystal Growth	7.0	1	Simulator Handout	sections 2,3,4,5,6	Fully Trained Operator	Every 6 months	PDC training personnel	7.1 Mals/Alts/Cor Maint Walk 7.2 Safety 7.4 Proficiency Building
	Dynamically Controlled Protein Crystal Growth	8.0	1	Simulator Eng H/W	None	Transfer Trained Fully Trained Operator	Not Required	PTC training personnel	8.2 Special Handling Reqts 8.3 Safety 8.4 Act/Deact Procedures 8.7 Transfer Operations Procedures 8.10 Proficiency Building
	Dynamically Controlled Protein Crystal Growth	8.0	1	Simulator	None	Fully Trained Operator	Not Required	PTC training personnel	8.2 Special Handling Reqts 8.3 Safety 8.4 Act/Deact Procedures 8.7 Transfer Operations Procedures 8.10 Proficiency Building
	Dynamically Controlled Protein Crystal Growth	9.0	1	Eng H/W	None	Fully Trained Operator Transport Trained	Not Required	PDC training personnel	9.3 Safety 9.5 Transport Operations Procedures 9.8 Proficiency Building
	Dynamically Controlled Protein Crystal Growth	9.0	1	Eng H/W	None	Fully Trained Operator	Not Required	PDC training personnel	9.3 Safety 9.5 Transport Operations Procedures 9.8 Proficiency Building

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
DCPCG-2									
DF									
DREAMTiME									
DT									
EGN	Protein Crystal Growth-Enhanced Gaseous Nitrogen Dewar	2.0	1	Handout				N/A (Self-Study)	2.1 Science Objectives 2.2 Science Background 2.3 Previous Studies/Flights
	Protein Crystal Growth-Enhanced Gaseous Nitrogen Dewar	3.0	1						

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
EGN	Protein Crystal Growth-Enhanced Gaseous Nitrogen Dewar	4.0	1	Handout				N/A (Self-Study)	4.1 Hardware and Software Overview 4.3 Data Collection 4.4 Payload to ISS System Interfaces 4.5 Safety Related to Hardware/Software Design
	Protein Crystal Growth-Enhanced Gaseous Nitrogen Dewar	5.0	1						
	Protein Crystal Growth-Enhanced Gaseous Nitrogen Dewar	6.0	1						
	Protein Crystal Growth-Enhanced Gaseous Nitrogen Dewar	7.0	1						
	Protein Crystal Growth-Enhanced Gaseous Nitrogen Dewar	8.0	1	Handout				N/A (Self-Study)	8.1 Payload Description 8.2 Payload Transfer Overview 8.3 Payload to ISS Interfaces 8.4 Special Handling Requirements
	Protein Crystal Growth-Enhanced Gaseous Nitrogen Dewar	9.0	1						
	Protein Crystal Growth-Enhanced Gaseous Nitrogen Dewar	10.0	1						

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
EMCS									
EPO-4									
ESTER									
ETR									
EXP-1									
EXP-17A.1									

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
EXP-2	ARIS	1.0	1	Handout		Generic Prime	Not Required	PDC training personnel	1.2 Types of Science Payload/Facility Supports 1.3 Payload/Facility Description 1.1 Purpose of Payload/Facility Background
	ARIS	6.0	1	Simulator Simulator	Section 1.0	Prime	Not Required	PDC training personnel	6.1 Nominal Operations Procedures Performance 6.2 Routine Maintenance Procedures Performance 6.3 Safety Procedures Performance 6.4 Stowage Procedures Performance
EXP-27A.1									
EXP-3									
EXP-4									

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
EXP-5									
EXP-6									
EXP-SAMPLE									
EXPSUB1									
EXPSUB2									
EXPSUB3									

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
EXPSUB4									
EXPSUB5									
EarthKAM									
EarthKAM-W									
End-To-End									
ExP									

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
FCU									
FOCUS									
GLAD									
GRC-TSC									
GSM									
HRF	BIOPSY	10.0	1	Other Eng H/W				PDC training personnel	10.4 Other
	BIOPSY	10.0	2	Eng H/W				PDC training personnel	10.4 Other

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
HRF	BIOPSY	10.0	3	Eng H/W				PDC training personnel	10.2 Preflight BDC
	BIOPSY	10.0	4	Eng H/W				PDC training personnel	10.2 Preflight BDC
	BIOPSY	10.0	5	Eng H/W				PDC training personnel	10.2 Preflight BDC
	BIOPSY	10.0	6	Eng H/W				PDC training personnel	10.2 Preflight BDC
	BIOPSY	10.0	7	Eng H/W				PDC training personnel	10.3 Postflight BDC
	EVARM	6.0	1	Eng H/W				PDC training personnel	6.1 Nominal Operations Procedures Performance
	EVARM	6.0	2	Eng H/W				PDC training personnel	6.1 Nominal Operations Procedures Performance
	EVARM	6.0	3	Other				PDC training personnel	6.1 Nominal Operations Procedures Performance
	Epstein-Barr	10.0	1	Eng H/W				PDC training personnel	10.2 Preflight BDC
	Epstein-Barr	10.0	2	Eng H/W				PDC training personnel	10.2 Preflight BDC
	Epstein-Barr	10.0	3	Eng H/W				PDC training personnel	10.3 Postflight BDC
	GASMAP	6.0	1	Eng H/W				PDC training personnel	6.1 Nominal Operations Procedures Performance
	GASMAP	6.0	2	Eng H/W				PDC training personnel	6.1 Nominal Operations Procedures Performance

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
HRF	GASMAP	6.0	3	Eng H/W				PDC training personnel	6.1 Nominal Operations Procedures Performance
	HRF Photo Requirements	5.0	1	Eng H/W				PDC training personnel	5.2 Nominal Operations/Routine Maintenance Overview
	HRF Rack/Hardware Review	5.0	1	Eng H/W				PDC training personnel	5.2 Nominal Operations/Routine Maintenance Overview
	HRF Rack/PC/Workstation	5.0	1	Eng H/W				PDC training personnel	5.2 Nominal Operations/Routine Maintenance Overview
	HRF Rack/PC/Workstation	6.0	1	Eng H/W				PDC training personnel	6.1 Nominal Operations Procedures Performance
	HRF Rack/PC/Workstation	6.0	2	Eng H/W				PDC training personnel	6.1 Nominal Operations Procedures Performance
	HRF Rack/PC/Workstation	6.0	3	Eng H/W				PDC training personnel	6.1 Nominal Operations Procedures Performance
	HRF/BDC Overview	2.0	1	Other				PDC training personnel	2.1 Science Objectives 2.2 Science Background 2.3 Previous Studies/Flights 2.4 Other
	HRF/BDC Overview	5.0	1	Eng H/W				PDC training personnel	5.2 Nominal Operations/Routine Maintenance Overview
	HRF/BDC Overview	2.0	2	Other				PDC training personnel	2.1 Science Objectives 2.2 Science Background 2.3 Previous Studies/Flights 2.4 Other

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
HRF	Interactions	2.0	1	Eng H/W				PDC training personnel	2.1 Science Objectives 2.2 Science Background 2.3 Previous Studies/Flights 2.4 Other
	Interactions	6.0	1	Other				PDC training personnel	6.1 Nominal Operations Procedures Performance
	Interactions	10.0	1	Eng H/W				PDC training personnel	10.2 Preflight BDC
	Interactions	10.0	1	Eng H/W				PDC training personnel	10.3 Postflight BDC
	Mobility	10.0	1	Eng H/W				PDC training personnel	10.2 Preflight BDC
	Mobility	10.0	1	Eng H/W				PDC training personnel	10.3 Postflight BDC
	Mobility	10.0	2	Eng H/W				PDC training personnel	10.2 Preflight BDC
	Mobility	10.0	2	Eng H/W				PDC training personnel	10.3 Postflight BDC
	Mobility	10.0	3	Eng H/W				PDC training personnel	10.2 Preflight BDC
	Mobility	10.0	3	Eng H/W				PDC training personnel	10.3 Postflight BDC
	Mobility	10.0	4	Eng H/W				PDC training personnel	10.2 Preflight BDC

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
HRF	Mobility	10.0	4	Eng H/W				PDC training personnel	10.3 Postflight BDC
	Mobility	10.0	5	Eng H/W				PDC training personnel	10.3 Postflight BDC
	Mobility	10.0	6	Eng H/W				PDC training personnel	10.3 Postflight BDC
	Mobility	10.0	7	Eng H/W				PDC training personnel	10.3 Postflight BDC
	PuFF	5.0	1	Other				PDC training personnel	5.2 Nominal Operations/Routine Maintenance Overview
	PuFF	6.0	1	Eng H/W				PDC training personnel	6.1 Nominal Operations Procedures Performance
	PuFF	10.0	1	Eng H/W				PDC training personnel	10.2 Preflight BDC
	PuFF	5.0	2	Eng H/W				PDC training personnel	5.2 Nominal Operations/Routine Maintenance Overview
	PuFF	6.0	2	Eng H/W				PDC training personnel	6.1 Nominal Operations Procedures Performance
	PuFF	10.0	2	Eng H/W				PDC training personnel	10.2 Preflight BDC
	PuFF	6.0	3	Eng H/W				PDC training personnel	6.1 Nominal Operations Procedures Performance
	PuFF	10.0	3	Eng H/W				PDC training personnel	10.2 Preflight BDC
	PuFF	6.0	4	CBT				N/A (Self-Study)	6.1 Nominal Operations Procedures Performance

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
HRF	PuFF	10.0	4	Eng H/W				PDC training personnel	10.2 Preflight BDC
	PuFF	10.0	5	Eng H/W				PDC training personnel	10.3 Postflight BDC
	Renal Stone	5.0	1	Eng H/W				PDC training personnel	5.2 Nominal Operations/Routine Maintenance Overview
	Renal Stone	6.0	1	Eng H/W				PDC training personnel	6.1 Nominal Operations Procedures Performance
	Renal Stone	10.0	1	Eng H/W				PDC training personnel	10.2 Preflight BDC
	Renal Stone	10.0	1	Eng H/W				PDC training personnel	10.3 Postflight BDC
	Renal Stone	6.0	2	Eng H/W				PDC training personnel	6.1 Nominal Operations Procedures Performance
	Renal Stone	10.0	2	Eng H/W				PDC training personnel	10.2 Preflight BDC
	Renal Stone	10.0	3	Eng H/W				PDC training personnel	10.2 Preflight BDC
	SMO - Entry Monitoring	6.0	1	Simulator				Other (Specify)	
	SMO - Entry Monitoring	10.0	1	Flight H/W				Other (Specify)	10.2 Preflight BDC
	SMO - Entry Monitoring	6.0	2	Simulator Eng H/W				Other (Specify)	6.1 Nominal Operations Procedures Performance
	SMO - Entry Monitoring	6.0	3	Simulator Eng H/W				Other (Specify)	6.1 Nominal Operations Procedures Performance

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
HRF	SMO - Entry Monitoring	6.0	4	Simulator Eng H/W				Other (Specify)	6.1 Nominal Operations Procedures Performance
	SMO - Entry Monitoring	6.0	5	Eng H/W				Other (Specify)	6.1 Nominal Operations Procedures Performance
	SMO - Midodrine	6.0	1	Handout				Other (Specify)	6.1 Nominal Operations Procedures Performance
	SMO - Midodrine	10.0	1					Other (Specify)	10.2 Preflight BDC
	SMO - Midodrine	6.0	2					Other (Specify)	6.1 Nominal Operations Procedures Performance
	SMO - Midodrine	10.0	2					Other (Specify)	10.3 Postflight BDC
	Subregional	10.0	1	Eng H/W				PDC training personnel	10.2 Preflight BDC
	Subregional	10.0	1	Eng H/W				PDC training personnel	10.3 Postflight BDC
	ULTRASOUND	5.0	1	Eng H/W				PDC training personnel	5.2 Nominal Operations/Routine Maintenance Overview
	ULTRASOUND	6.0	1	Eng H/W				PDC training personnel	6.1 Nominal Operations Procedures Performance
	ULTRASOUND	6.0	2	Eng H/W				PDC training personnel	6.1 Nominal Operations Procedures Performance
	ULTRASOUND	6.0	3	Eng H/W				N/A (Self-Study)	6.1 Nominal Operations Procedures Performance
	Xenon1	10.0	1	Eng H/W				PDC training personnel	10.2 Preflight BDC

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
HRF	Xenon1	10.0	2	Eng H/W				PDC training personnel	10.3 Postflight BDC
HRF IFPR									
HRF2									
ICT Dry Run									
IH									
JSC-TSC									

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
KuBRS									
LTMPF									
MACE II									
MAMS	Microgravity Acceleration Measurement System	4.0	1	Handout					4.1 Hardware and Software Overview
MELFI									
MEPS									

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
MGBX									
MISSE									
MSFC-TSC									
MSG	Investigating the Structure of Paramagnetic Aggregates from	2.0	1	Handout			Not required	PDC training personnel	2.1 Science Objectives 2.2 Science Background 2.3 Previous Studies/Flights
	Investigating the Structure of Paramagnetic Aggregates from	4.0	1	Handout Simulator			Not required	PDC training personnel	4.4 Payload to ISS System Interfaces 4.5 Safety Related to Hardware/Software Design 4.1 Hardware and Software Overview 4.2 Commanding 4.3 Data Collection

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
MSG	Investigating the Structure of Paramagnetic Aggregates from	5.0	1	Handout Simulator			Not required	PDC training personnel	5.1 Timeline Scheduling Requirements Overview 5.2 Nominal Operations/Routine Maintenance Overview 5.3 Corrective Maintenance/ALT/Malfunction Operations Overview 5.4 Operational Safety 5.5 Stowage and Logistics 5.7 Crew to Ground Interfaces Operations
	Investigating the Structure of Paramagnetic Aggregates from	6.0	1	CBT Handout Simulator			1.5 h every 4 months	PDC training personnel	6.1 Nominal Operations Procedures Performance
	Investigating the Structure of Paramagnetic Aggregates from	7.0	1	CBT Handout Simulator				PDC training personnel	7.1 Malfunction/Alternative/Corrective Maintenance
	Investigating the Structure of Paramagnetic Aggregates from	8.0	1	CBT Simulator			Not required	PDC training personnel	8.6 Transfer/Installation/Connection Procedures Performance
	Microgravity Science Glovebox	1.0	1	Handout Simulator	None	Fully Trained Operator	Not Required	PDC training personnel	1.2 Science Objectives of the Facility 1.3 Facility Description Other (Safety Overview)

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
MSG	Microgravity Science Glovebox	4.0	1	Handout Simulator	1.0 PL Facility Overview for MSG	Fully Trained Operator	Not Required	PDC training personnel	4.1 HW and SW Overview 4.2 Commanding 4.3 Data Collection 4.5 Safety related to HW/SW Design
	Microgravity Science Glovebox	5.0	1	Handout Simulator	4.0 PL Systems Overview for MSG	Fully Trained Operator	Not Required	PDC training personnel	5.1 Activity Definitions Overview 5.3 Nominal Ops/Routine Maint 5.4 Corrective Maint/Alt/Mal Ops 5.5 Operational Safety 5.6 Stowage and Logistics 5.7 LSE I/Fs 5.8 Crew/Ground I/Fs During Ops
	Microgravity Science Glovebox	6.0	1				Not Required	PDC training personnel	6.2 Routine Maintenance Procedures Performance 6.1 Nominal Operations Procedures Performance

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
MSG	Microgravity Science Glovebox	7.0	1	Simulator	4.0 PL Systems Overview for MSG 5.0 PL Operations Overview for MSG 6.0 PL Nominal Operations Training	Fully Trained Operator	Not Required	PDC training personnel	7.1 Mals/Alts/Cor Maint Walk 7.2 Safety 7.3 Stowage
	Microgravity Science Glovebox	8.0	1						
	Microgravity Science Glovebox	9.0	1						
	Microgravity Science Glovebox	1.0	2	Handout Simulator	None	Prime	Not Required	PDC training personnel	1.4 Video Overview
	Microgravity Science Glovebox	6.0	2				Not Required	PDC training personnel	6.2 Routine Maintenance Procedures Performance 6.1 Nominal Operations Procedures Performance

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
MSG	Microgravity Science Glovebox	7.0	2	Simulator	4.0 PL Systems Overview for MSG 5.0 PL Operations Overview for MSG 6.0 PL Nominal Operations Training	Fully Trained Operator	Not Required	PDC training personnel	7.1 Mals/Alts/Cor Maint Walk 7.2 Safety 7.3 Stowage
	Microgravity Science Glovebox	6.0	3				Not Required	PDC training personnel	6.1 Nominal Operations Procedures Performance 6.2 Routine Maintenance Procedures Performance
	Microgravity Science Glovebox	6.0	4				Not Required	PDC training personnel	6.5 Other
	g-LIMIT	2.0	1	Handout CBT	None	Prime	Not Required	PDC training personnel	2.1 Science Objectives 2.2 Science Background
	g-LIMIT	4.0	1	Handout CBT Handout				PDC training personnel	4.1 Hardware and Software Overview 4.2 Commanding 4.3 Data Collection 4.4 Payload to ISS System Interfaces 4.5 Safety Related to Hardware/Software Design

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
MSG	g-LIMIT	5.0	1	CBT Handout Handout				PDC training personnel	5.1 Activity Definitions Overview 5.2 Timeline Scheduling Requirements Overview 5.3 Nominal Operationa/Routine Maintenace Overview 5.4 Corrective Maintenance/ALT/Malfunction Operations Overview 5.5 Operational Safety 5.6 Stowage and Logistics 5.8 Crew to Ground Interfaces Operations
	g-LIMIT	6.0	1	Simulator Handout CBT	section 2	Prime	Not Required	PDC training personnel	6.1 Nominal Operations Procedures Performance
	g-LIMIT	7.0	1	CBT Simulator Handout	Section 2, 6	Prime	Not Required	PDC training personnel	7.1 Malfunction/ALT/Corrective Maintenance and IFM Procedures Performance
	g-LIMIT	8.0	1	CBT Simulator Handout	sections 2,6,7	Prime	Not Required	PDC training personnel	8.6 Transfer/Installation/Connection Procedures Performance

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
MSG	g-LIMIT	7.0	2	CBT Simulator Handout	Section 2, 6	Prime	Not Required	PDC training personnel	7.1 Malfunction/ALT/Corrective Maintenance and IFM Procedures Performance
MSRR-1									
NLO-PTFG									
NLO-PVT									
OPCGA									
PCG-BAG									

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
PCG-STES	PCG-STES	2.0	1	Handout	None	Prime	Not Required	PDC training personnel	2.2 Science Background 2.3 Previous Studies/Flights 2.4 Other 2.1 Science Objectives
	PCG-STES	3.0	1						
	PCG-STES	4.0	1	Handout Simulator Simulator	None	Prime	Not Required	PDC training personnel	4.1 Hardware and Software Overview 4.2 Commanding 4.3 Data Collection 4.4 Payload to ISS System Interfaces
	PCG-STES	5.0	1		None	Prime	Not Required	PDC training personnel	
	PCG-STES	6.0	1	Simulator Simulator	None	Prime	Not Required	PDC training personnel	6.1 Nominal Operations Procedures Performance 6.2 Routine Maintenance Procedures Performance 6.4 Stowage Procedures Performance 6.5 Other
	PCG-STES	7.0	1		None	Prime	Not Required	PDC training personnel	
	PCG-STES	8.0	1		None	Prime	Not Required	PDC training personnel	
	PCG-STES	9.0	1		None	Prime	Not Required	PDC training personnel	

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
PCG-STES	PCG-STES	10.0	1						
PCS									
PDS	PDS	2.0	1	Workbook	None	Prime	Not Required	PDC training personnel	2.1 Science Objectives 2.2 Science Background 2.3 Previous Studies/Flights
	PDS	4.0	1	Simulator	None	Prime	Not Required	PTC training personnel	4.1 Hardware and Software Overview 4.2 Commanding 4.3 Data Collection 4.4 Payload to ISS System Interfaces 4.5 Safety Related to Hardware/Software Design

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
PDS	PDS	5.0	1	Workbook		Prime	Not Required	PTC training personnel	5.1 Activity Definitions Overview 5.2 Timeline Scheduling Requirements Overview 5.3 Nominal Operationa/Routine Maintenace Overview 5.4 Corrective Maintenance/ALT/Malfunction Operations Overview 5.6 Stowage and Logistics 5.8 Crew to Ground Interfaces Operations
	PDS	6.0	1	Simulator		Prime	Not Required	PTC training personnel	6.1 Nominal Operations Procedures Performance 6.3 Safety Procedures Performance 6.4 Stowage Procedures Performance
	PDS	6.0		Simulator					6.1 Nominal Operations Procedures Performance 6.2 Routine Maintenance Procedures Performance 6.3 Safety Procedures Performance 6.4 Stowage Procedures Performance

PEI

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
PERS	Click New to create a record.	6.0	1	Simulator				PDC training personnel	6.5 Other
PGBA	PGBA/CGBA	2.0	1	Handout				PDC training personnel	2.1 Science Objectives 2.2 Science Background
	PGBA/CGBA	3.0	1	Other Other Simulator Simulator					3.1 Skill Building 3.2 Laboratory Work
	PGBA/CGBA	4.0	1	Other					4.1 Hardware and Software Overview 4.5 Safety Related to Hardware/Software Design
	PGBA/CGBA	5.0	1	Other					5.1 Timeline Scheduling Requirements Overview 5.4 Operational Safety 5.5 Stowage and Logistics
	PGBA/CGBA	6.0	1	Simulator Simulator				PDC training personnel	

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
PGBA	PGBA/CGBA	8.0	1	Handout Simulator				PDC training personnel	8.1 Payload Description 8.2 Payload Transfer Overview 8.3 Payload to ISS Interfaces 8.4 Special Handling Requirements 8.5 Safety 8.6 Transfer/Installation/Connection Procedures Performance 8.7 Applicable Malfunctions Procedures Performance
	PGBA/CGBA	9.0	1	Handout Simulator				PDC training personnel	9.1 Payload Description 9.2 Payload Transport Overview 9.3 Special Handling Requirements 9.4 Safety 9.5 Transport Operations Procedures Performance 9.6 Applicable Malfunctions Procedures
PSCP									
RWPS									

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
S*T*A*R*S									
SAMS II	SAMS II, Interim Control Unit	2.0	1	Handout	None	Fully Trained Operator	Not Required	PDC training personnel	2.2 Science Objectives 2.3 Science Background
	SAMS II, Interim Control Unit	3.0	1						
	SAMS II, Interim Control Unit	4.0	1		None	Fully Trained Operator	Not Required	PDC training personnel	4.5 Safety related to HW/SW Design
	SAMS II, Interim Control Unit	5.0	1		None	Fully Trained Operator	Not Required	PDC training personnel	5.8 Crew/Ground I/Fs During Ops
	SAMS II, Interim Control Unit	6.0	1	Simulator Simulator	None	Fully Trained Operator	Not Required	PTC training personnel	6.1 Nom Ops Proced Walk 6.2 Routine Maintenance 6.3 Safety 6.4 Stowage 6.5 Proficiency Building
	SAMS II, Interim Control Unit	8.0	1		None				
	SAMS II, Interim Control Unit	9.0	1		None				

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
SPHERES									
SkySat									
Space DRUMS									
Vulcan-TP/PDA									
WORF	WORF Rack	4.0	1	Handout				PDC training personnel	4.1 Hardware and Software Overview 4.4 Payload to ISS System Interfaces 4.5 Safety Related to Hardware/Software Design
	WORF Rack	6.0	1	Simulator				PDC training personnel	6.1 Nominal Operations Procedures Performance 6.3 Safety Procedures Performance 6.4 Stowage Procedures Performance
	WORF Rack	7.0							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
WORF	WORF Rack	9.0							
WPRAC									
WPRAC2									
WSF1									
ZCG	ZCG Furnace Unit	2.0	1	Handout				PDC training personnel	2.2 Science Objectives 2.1 Exp. Background
	ZCG Furnace Unit	3.0	1						
	ZCG Furnace Unit	4.0	1	Handout Video Simulator			Not Required	PDC training personnel	4.1 HW and SW Overview 4.2 Commanding 4.3 Data Collection 4.4 PL to ISS System I/Fs 4.5 Safety related to HW/SW Design

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
ZCG	ZCG Furnace Unit	5.0	1	Handout Video Video Simulator			Not Required	PDC training personnel	5.1 Activity Definitions Overview 5.2 TL Scheduling Reqts Overview 5.3 Nominal Ops/Routine Maint 5.4 Corrective Maint/Alt/Mal Ops 5.5 Operational Safety 5.6 Stowage and Logistics
	ZCG Furnace Unit	6.0	1	Simulator			Not Required	PDC training personnel	6.1 Nom Ops Proced Walk 6.2 Routine Maintenance 6.3 Safety 6.4 Stowage 6.5 Proficiency Building
	ZCG Furnace Unit	7.0	1	Simulator			Not Required	PDC training personnel	7.1 Mals/Alts/Cor Maint Walk
	ZCG Furnace Unit	6.0	2	Simulator			Every 5 months	PDC training personnel	6.3 Safety 6.4 Stowage 6.5 Proficiency Building 6.2 Routine Maintenance 6.1 Nom Ops Proced Walk
	ZCG Furnace Unit	7.0	2	Simulator			Every 5 months	PDC training personnel	7.1 Mals/Alts/Cor Maint Walk
	ZCG Furnace Unit	7.0	3	Simulator			Not Required	PDC training personnel	7.2 Safety

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY - PART 2

INCREMENT ISS-5

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Medium	Prerequisites	Proficiency	Currency	Instructor	Objective
g-LIMIT									